

Discussion Paper 2: Agricultural Water Measurement (Project A2)

[Note: This paper represents DWR staff's preliminary understanding of provisions in the Water Conservation Act of 2009, referred to below as SBx7-7, and is not considered to be DWR's official position. DWR invites comment and input on the preliminary understanding and identified key issues presented in this paper. Comments should be submitted to DWR staff at agwue@water.ca.gov]

SBx7-7, enacted in November of 2009, includes provisions on water conservation, measurement, and reporting activities for agricultural water suppliers. DWR is coordinating with the Agricultural Water Management Council and a stakeholder committee in advance of developing regulations on a range of agricultural water measurement options that water suppliers may use to measure water delivered to customers.

Provisions Related to Agricultural Water Measurement

Paragraph 10608.48(i)(1) of SBx7-7 states:

The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

That paragraph refers to 10608.48(b) of SBx7-7:

Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

Section 10813 defines customer as “a purchaser of water from a water supplier who uses water for agricultural purposes.”

Section 531.10 of the California Water Code requires that:

(a) An agricultural water supplier shall submit an annual report to the department that summarizes aggregated farm-gate delivery data, on a monthly or bi-monthly basis, using best professional practices.

(b) Nothing in this article shall be construed to require the implementation of water measurement programs or practices that are not locally cost effective.

Note also that Section 531 defines a lower size threshold for aggregate reporting purposes than SBx7-7 specifies for its measurement regulations.

Section 10608.12 (a) of SBx7-7 states:

“Agricultural water supplier” means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. “Agricultural water supplier” includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. “Agricultural water supplier” does not include the department.

Further, agricultural water suppliers that provide water to less than 25,000 acres only need to comply if funding is provided to cover additional costs imposed (see section 10853).

In contrast, Section 531 of the Water Code states:

531(b) "Agricultural water supplier" means a supplier either publicly or privately owned, supplying 2,000 acre-feet or more of surface water annually for agricultural purposes or serving 2,000 or more acres of agricultural land. An agricultural water supplier includes supplier or contractor for water, regardless of the basis of right, which distributes or sells water for ultimate resale to customers.

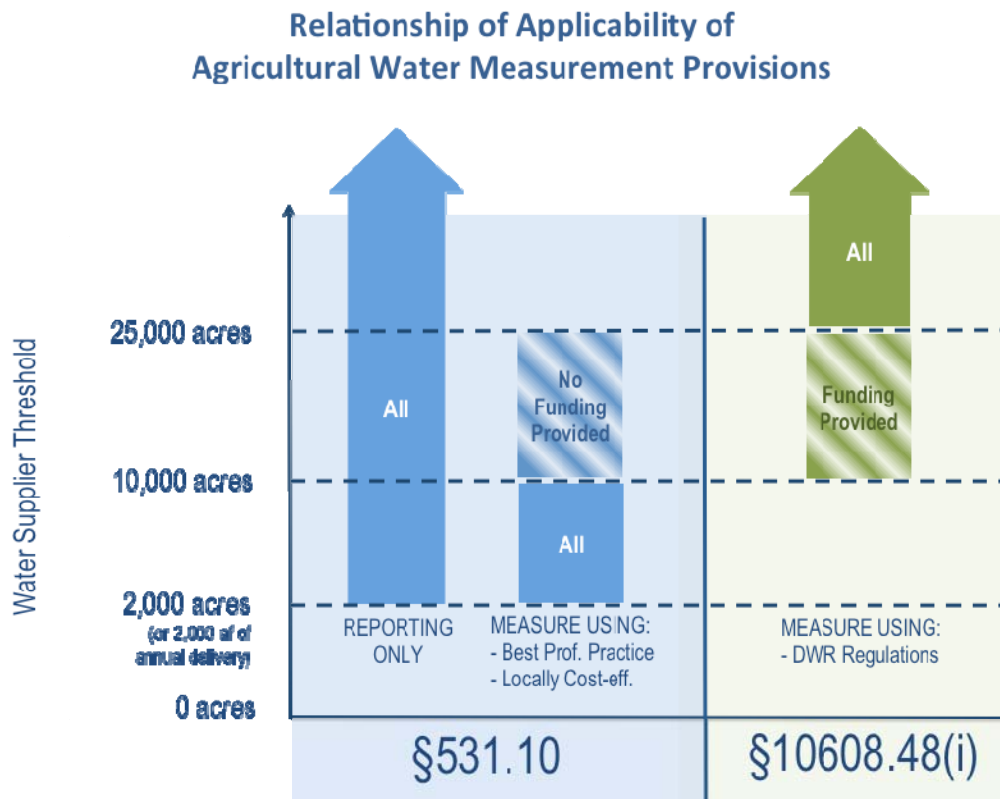
DWR Staff's Preliminary Understanding

Agricultural water suppliers as defined in SBx7-7 must have in place or implement measurement of water delivered to customers. The measurement must be accurate enough to 1) allow the water supplier to charge its customers at least in part based on volume of water delivered; and 2) to meet the aggregate delivery reporting requirements already specified in the Water Code.

Only agricultural water suppliers that provide water to more than 10,000 irrigated acres are affected by this measurement requirement (see section 10608 (a)). Further, agricultural water suppliers that provide water to less than 25,000 acres only need to comply if funding is provided to cover additional costs imposed (see section 10853). Both of these acreage thresholds exclude acreage served by recycled water.

- These acreage thresholds are larger than the acreage threshold specified on Section 531 of the Water Code (quoted above), even though the new legislation refers to that section as one of the purposes of measurement. This appears to mean that, whereas all suppliers meeting the Section 531 threshold must report “aggregated farm-gate delivery”, only suppliers that surpass the higher thresholds must follow the measurement regulations that DWR will develop pursuant to SBx7-7. The requirements are illustrated in the figure below.
- Section 531 of the Water Code also specifies “best professional practices” for reporting of aggregated farm-gate deliveries and states that the reporting requirement does not require water suppliers to implement water measurement practices that are not “locally

cost effective". DWR staff's initial interpretation is illustrated in the figure below: the SBx7-7 measurement regulations apply to water suppliers greater than 25,000 acres and to water suppliers between 10,000 and 25,000 acres if funding is provided.



DWR staff's initial interpretation, as displayed in the figure, is:

- **Agricultural water suppliers that serve 2,000 or more acres or 2,000 acre-feet or more annually but serve less than 10,000 acres** must submit an annual report to DWR of aggregated water deliveries to customers. These suppliers must also report deliveries using best professional practices that are locally cost effective.
- **Agricultural water suppliers serving 10,000 or more acres but less than 25,000 acres** must submit an annual report to DWR of aggregated water deliveries to customers. If no funding is provided to meet DWR's measurement regulations, these suppliers must report deliveries measured by best professional practices if they are locally cost effective. If funding is provided to meet DWR's measurement regulations, these suppliers shall report deliveries measured in a way that meets those regulations.
- **Agricultural water suppliers serving 25,000 acres or more** must submit an annual report to DWR of aggregated water deliveries to customers. These suppliers must also measure deliveries in a way that meets DWR's regulations.

Agricultural water suppliers include both retail and wholesale water suppliers that meet the definitions. DWR is specifically excluded from the definition of an agricultural water supplier. Federal agencies, such as the U.S. Bureau of Reclamation, are excluded.

DWR staff understands the phrase “recycled water” in 10608.12 (a) to mean municipal or industrial wastewater that has been treated for waste and is thus usable for irrigation (see section 13050 (n) of the California Water Code). It does not mean untreated return flow from other irrigated lands.

Measurement in 10608.48(i)(1) refers only to water delivered to customers by an agricultural water supplier. It does not include groundwater pumped from private wells even though the groundwater may be managed by a public agency. Groundwater pumped by wells owned by the agricultural water supplier and provided to customers as part of its delivered irrigation water would be subject to the measurement requirement (provided the water supplier meets the other conditions specified). Irrigation return flow leaving fields, farms, or district boundaries is not subject to the measurement requirement, except if it is collected by the water supplier and provided as irrigation delivery to other customers.

Measurement in 10608.48(i)(1) refers only to water delivered under the control of the water supplier. For example, water delivered by the supplier to a customer at a turnout is subject to the measurement regulation; however, the customer may route that delivery to one or more fields on his or her farm, and delivery to each of those fields would not be subject to the measurement regulation.

A customer is defined as a purchaser of water, so in most cases a water supplier’s customers would correspond to its billing accounts. Nevertheless, measurement must occur at discrete physical locations, so if a supplier delivers water to one customer at more than one location, it would follow the measurement regulations at each of those delivery locations.

DWR must develop and adopt regulations that provide for a range of measurement options. DWR intends that these options should allow for a range of conditions and delivery system configurations, including pressurized pipe delivery, non-pressurized pipe delivery, and open-channel delivery. Options may include specific measurement devices and/or measurement accuracy standards that could be met by more than one kind of measurement device. The adopted regulations may also include standards for device rating or calibration and may set minimum standards for frequency of measurement and quality control.

According to the legislation, the regulations will “provide for a range of options that an agricultural water supplier may use or implement to comply with the measurement requirement.” DWR staff interprets the phrase “may use or implement” to mean that suppliers can choose among the measurement options provided. It does not mean that suppliers have the option of not following the regulation.

Key Issues Identified

DWR staff has identified a number of issues and questions that need further clarification or discussion. The list below is not exhaustive, and DWR hopes to identify additional questions

and possible solutions through public listening sessions and meetings with the Agricultural Stakeholder Committee.

- Should the options for measurement include specific hardware devices, accuracy standards, or both?
- If accuracy standards are adopted and included in the measurement options, should they be uniform for all conditions, or should they vary depending on characteristics of the delivery system. What are the key characteristics of the delivery system that should be considered (e.g., pressurized pipe versus open channel, automated versus hand-operated)?
- How should accuracy of measurement devices be established?
 - Rely on manufacturer rating?
 - Require periodic field testing and calibration (if so, how often is reasonable or necessary?)
- U.S. Bureau of Reclamation publishes its “Water Measurement Manual” (2001) in cooperation with USDA. This manual provides guidance on measurement devices and on measurement accuracy and quality control. To what extent should DWR make use of information in this document?
- The U.S. Bureau of Reclamation has developed measurement standards as part of its Water Conservation Guidelines. To what extent should DWR make use of those: for example, should DWR allow USBR contractors to be assumed compliant if they satisfy USBR guidelines? How would the regulation be updated if USBR modifies its Guidelines?
- Should the regulations address only measurement options, or should they also address related issues such as data management and quality control. If so what are the roles of the water suppliers?
- Is DWR staff’s initial interpretation of the acreage and irrigation water thresholds, as stated and illustrated above in the Preliminary Understanding, feasible for implementation and reporting?
- DWR staff interprets “water delivered to customers” to mean the point at which control of the water flow changes from the water supplier to the customer. In some situations, customers may be in control of the actual diversion of water from a supplier-owned facility onto their farms. An example is water in a drainage canal that is owned and maintained by the supplier, but from which an individual irrigator may draw water.
 - Does this still qualify as water delivered to customers, and so must conform to the measurement regulations? If so, how would a water supplier implement or enforce the regulations?
 - Should the regulations attempt to define the conditions under which a water supplier has sufficient “control” of the water to allow it to measure?

- Presumably all water supplier personnel must follow operational standards that comply with the water supplier's measurement responsibilities – what responsibility or authority would the supplier have to apply its operational standards to individual irrigators if they are drawing water from a supplier-owned facility?